

### REMARKS/ARGUMENTS

The claims are 17-23 and 29-33, claims 24-27 having been withdrawn by the Examiner as directed to a non-elected invention. Claim 29 has been amended to change metal "wire" thread to metal -- fiber -- thread, as was originally intended, and this claim and claims 30 and 17-19 have also been amended to correct the spelling of "fiber". Reconsideration is expressly requested.

Claims 17-23 and 29-33 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Pall et al.* U.S. Patent No. 3,327,866 in view of *Halker* U.S. Patent No. 4,948,658. Essentially the Examiner's position was that *Pall et al.* discloses the cloth, net or mesh recited in the claims except for a plurality of metal fiber threads worked in between the metal wires, that *Halker* discloses this feature, and that it would have been obvious to one of ordinary skill in the art to have inserted *Halker's* metal fibers into the woven, wire or mesh of *Pall et al.* as motivated by a desire to create a filter having improved filtration properties.

This rejection is respectfully traversed.

As set forth in claim 29 as amended, Applicants' invention provides a cloth, net or mesh made from metal including a plurality of metal wires and a plurality of metal fiber threads worked in between the metal wires. Each metal fiber thread includes a bundle of fibers and each fiber has a diameter less than 100  $\mu\text{m}$ . In addition, a section through the metal fiber thread has more than 100 fibers. In this way, Applicants' invention provides a cloth, net or mesh made from metal that is particularly suitable for filtration and is inexpensive to produce, yet provides optimal filtration results.

As more specifically recited in claim 19 as amended, the metal wires constitute the warp and the metal fiber threads constitute the weft of a cloth. In this way, the metal fiber thread is arranged in a protective manner in the cloth and ideally has no crease marks, which may cause the thread in part to be excessively compressed.

None of the cited references discloses or suggests a cloth, net or mesh made from metal including metal fiber threads worked in between metal wire, where each metal fiber thread includes a bundle of fibers having a diameter of less than 100  $\mu\text{m}$  and a section through the metal fiber thread has more than 100 fibers. The primary reference to *Pall et al.* simply shows a conventional filter material, for example, in FIG. 9, which is also suitable for depth filters. *Pall et al.* teaches in column 4, line 70 ff, that the metal wires used are monofilaments in usual manner, because such wires are preferred for filters tasks. FIGS. 9-12 show that good filtration properties in connection with great stability can be achieved particularly by means of the structure of the woven textile. There is no disclosure or suggestion in *Pall et al.* of a plurality of metal fiber threads worked in between metal wires or of having each fiber have a diameter of less than 100  $\mu\text{m}$  and a section through the metal fiber thread having more than 100 fibers.

The defects and deficiencies of the primary reference to *Pall et al.* are nowhere remedied by the secondary reference to *Halker*.

*Halker* relates not to filtration processes, such as in particular depth filtration, but rather to removal of water from paper materials during paper production. *Halker* shows a much looser structure which is suitable for water removal during paper production, but cannot be used for usual filtration tasks. It is respectfully submitted that a person skilled in the art would not look among woven textiles or screens for paper production to find materials to improve filters, as suggested by the Examiner. Moreover, there is nothing in *Halker* that would lead a person skilled in the art to change the materials used in the primary reference to *Pall et al.* which teaches that monofilament wires are preferred for filter uses in the usual manner and that good filtration properties are achieved with the structure of FIGS. 9-12.

Even if a person skilled in the art were to have considered *Halker*, which relates to the removal of water from paper materials during paper production rather than filtration processes, that person would have learned from FIG. 3 of *Halker* how such fiber bundles surrounded with a wire are attached to a

woven fabric. *Halker* teaches using the wire that is needed to hold the fiber bundle together to attach the fiber bundle to a woven wire textile as well. Weaving the loose wire bundles in is not recommended because the wire bundles would be pressed together as a result and lose their loose position within the wire looped around them.

Accordingly, it is respectfully submitted that a person skilled in the art would easily recognize from the *Halker* reference that while wire bundles or multi-filament wires can be used, they lose the filtration effect of a wire bundle due to the tight weaving in of such bundles. Moreover, *Halker* shows wire bundles having six capillaries. In contrast Applicants' cloth, net or mesh made from metal, as recited in claim 29 as amended, has far more than 100 capillaries or fibers. In addition, the capillaries in *Halker* have a diameter of approximately 2000  $\mu\text{m}$  while Applicants' fibers or capillaries, as recited in claim 29 as amended, have a diameter of less than 100  $\mu\text{m}$ .

Although arguably one skilled in the art might have selected

three, six or twelve capillaries having a diameter of 1000, 2000 or 3000  $\mu\text{m}$  in order to achieve specific properties from the teachings of *Halker* (assuming that *Halker* would even be considered), it is respectfully submitted that one skilled in the art would have no reason to select a diameter less than 100  $\mu\text{m}$ , which represents a difference in dimensions of one to two powers of ten, which is simply incomparable to anything taught by *Halker*.

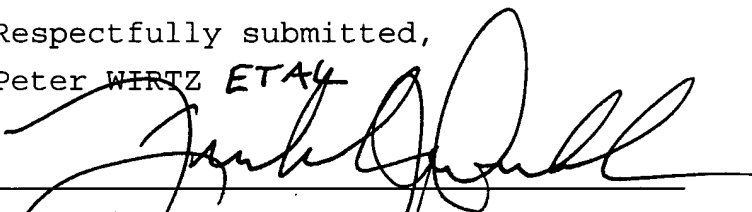
Moreover, it is respectfully submitted that there is no disclosure or suggestion in any of the references of producing a woven metal textile in which metal wire forms the weft and a special metal-fiber yarn forms the warp of the woven fabric, as recited in claim 19 as amended. Such a woven fabric, having such fine capillaries or fibers and more than 100 individual fibers or capillaries as the weft of the fabric was never proposed before, particularly in the case of filter systems, and it was therefore surprising to learn that such a woven textile structure in particular offers sufficient stability and strength for filter systems, yet the bundle of fiber capillaries can also function as

a screen material within the woven fabric. Accordingly, it is respectfully submitted that claim 29 as amended together with the dependent claims, including specifically claim 19, which depend directly or indirectly thereon, are patentable over the cited references.

In summary, claims 17-19 and 29-30 have been amended. In view of the foregoing, withdrawal of the Final Action and allowance of this application are respectfully requested.

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Respectfully submitted,  
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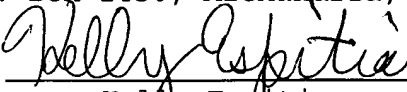


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